

Nos. 22-1932, 22-1933, 22-1934, 22-1935

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**United States Court of Appeals  
for the Federal Circuit**

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EOLAS TECHNOLOGIES INCORPORATED,  
*Plaintiff-Appellant,*

v.

AMAZON.COM, INC., GOOGLE LLC, WALMART, INC.,  
*Defendants-Appellees.*

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Appeals from the United States District Court for the Northern District of  
California in Nos. 4:17-cv-03022-JST, 4:17-cv-01138-JST, 4:17-cv-03023-JST,  
Judge Jon S. Tigar.

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GOOGLE LLC,  
*Plaintiff-Appellee,*

v.

EOLAS TECHNOLOGIES INCORPORATED,  
*Defendant-Appellant,*  
REGENTS OF THE UNIVERSITY OF CALIFORNIA,  
*Defendant.*

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Appeals from the United States District Court for the Northern District of  
California in No. 4:15-cv-05446-JST, Judge Jon S. Tigar.

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**REPLY BRIEF FOR EOLAS TECHNOLOGIES INCORPORATED**

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Joel L. Thollander  
John B. Campbell  
Joshua W. Budwin  
James E. Quigley  
MCKOOL SMITH, P.C.  
303 Colorado Street, Suite 2100  
Austin, TX 78701  
(512) 692-8700  
*Attorneys for Plaintiff-Appellant*

January 26, 2023

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## CERTIFICATE OF INTEREST

<b>Case Number</b>	Nos. 22-1932, 22-1933, 22-1934, 22-1935
<b>Short Case Caption</b>	Eolas Technologies Incorporated v. Amazon.com, Inc.
<b>Filing Party/Entity</b>	Eolas Technologies Incorporated

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I certify the following information and any attached sheets are accurate and complete to the best of my knowledge.

Date January 26, 2023

Signature: /s/ Joel L. Thollander

Name: Joel L. Thollander

<b>1. Represented Entities.</b> Fed. Cir. R. 47.4(a)(1).	<b>2. Real Party in Interest.</b> Fed. Cir. R. 47.4(a)(2).	<b>3. Parent Corporations and Stockholders.</b> Fed. Cir. R. 47.4(a)(3).
Provide the full names of all entities represented by undersigned counsel in this case.	Provide the full names of all real parties in interest for the entities. Do not list the real parties if they are the same as the entities.  <input checked="" type="checkbox"/> None/Not Applicable	Provide the full names of all parent corporations for the entities and all publicly held companies that own 10% or more stock in the entities.  <input checked="" type="checkbox"/> None/Not Applicable
Eolas Technologies Incorporated	None.	None.

☐ ADDITIONAL PAGES ATTACHED

**4. Legal Representatives.** List all law firms, partners, and associates that (a) appeared for the entities in the originating court or agency or (b) are expected to appear in this court for the entities. Do not include those who have already entered an appearance in this court. Fed. Cir. R. 47.4(a)(4).

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<b>McKool Smith, P.C.:</b>	Eliza Beeney, Jennifer L. Truelove, John F. Garvish II, Kevin Hess, Mike McKool, Craig N. Tolliver (no longer with the firm), Kevin L. Burgess (no longer with the firm), Mario A. Apreotesi (no longer with the firm), Stephanie M. Ryan (no longer with the firm)
<b>Dan Johnson Law Group, LLP</b>	Daniel Johnson Jr., James A. Glenn, Mario Moore, Robert G. Litts (no longer with the firm)
<b>Patton Tidwell &amp; Culbertson</b>	Geoffrey P. Culbertson, Kelly Tidwell
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☐ None/Not Applicable

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<i>Eolas Technologies Incorporated v. Google LLC</i> , No. 22-1933 (Fed. Cir.)	<i>Eolas Technologies Incorporated v. Walmart, Inc.</i> , No. 22-1934 (Fed. Cir.)	<i>Google LLC v. Eolas Technologies Incorporated</i> , No. 22-1935 (Fed. Cir.)
<i>Eolas Technologies Incorporated v. Wal-Mart Stores Texas, LLC</i> , No. 6:17-cv-242 (E.D. Tex.)	<i>In re: Google Inc.</i> , No. 17-107 (Fed. Cir. Feb. 23, 2017) (Prost, C.J.) (granting venue-related mandamus petition in the	<i>In re: Google Inc.</i> , No. 17-103 (Fed. Cir. Nov. 4, 2016) (order dismissing venue-related mandamus petition in the district

	district court case underlying docketed Case No. 22-1933)	court case underlying docketed Case No. 22-1933)
<i>Eolas Technologies Incorporated et al. v. Amazon.com, Inc. et al.</i> , No. 12-1632 (Fed. Cir. July 22, 2013) (per curiam (Newman, J.; Bryson, J.; Prost, J.) Rule 36 Judgment in case involving family members of current Patent-in-Suit)	<i>In re Google Inc. et al.</i> , Misc. Docket No. 968 (Fed. Cir. Mar. 4, 2011) (Moore, J.) (denying venue-related mandamus petition in the district court case underlying docketed Case No. 12-1632)	

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☒ None/Not Applicable

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## INTRODUCTION

The asserted claims recite systems and methods providing a new architecture for the then-nascent World Wide Web. Prior to the invention, interactive objects were downloaded to client computers and manipulated with stand-alone helper applications launched by users. The invention teaches relocating objects so they are embedded within Web pages; preconfiguring Web browsers with applications that are in turn broken up and distributed to run on remote computers; and automatically invoking selected applications to permit in-browser interaction with embedded objects. This new architecture improved the Web itself, providing substantially increased network functionality in the areas of interactivity, scalability, and security. All this, which confirms that these claims are directed to patent-eligible subject matter, is demonstrated in Eolas' opening brief. Eolas' Brief (E.Br.) 15-23, 29-35.

In response, Appellees miss the structural and concrete improvements to which the claims are directed by ignoring their plain-language limitations. Appellees' Brief (A.Br.) 21-49. Appellees adopt the district court's formulation of the "abstract idea" to which the claims are purportedly directed, but that formulation fails to account for the "World Wide Web" limitations—recited fourteen times in the claim analyzed by the district court. A.Br. 5; E.Br. 43-44. That formulation also fails to account for the "configured" limitations—which provide the reconfigured structure of the improved network system. E.Br. 44-45. Given these flaws, it is no

surprise that Appellees, like the district court, miss the fundamental nature of the claims as drawn to a newly “configured” “World Wide Web” architecture.

At *Alice* step one, Appellees argue that “two reasons” support the district court’s holding. A.Br. 21. First, Appellees assert that the claims recite only “Result-Oriented Functional Language,” and no structure. A.Br. 21. But that simply ignores the numerous structural limitations in the claims—those reciting how the relevant “World Wide Web” components are to be newly “configured.” E.Br. 29-35. Second, Appellees argue that the idea to which the claims are directed can be summarized as “many hands make light work.” A.Br. 32. But the claims go far beyond that old adage, which says nothing about embedding objects, preconfiguring browsers, automatically invoking applications, or coordinating work among remote computers—all significant and specific aspects of the invention that cannot be disregarded without rendering the step-one analysis “materially inaccurate.” E.Br. 44; *TecSec, Inc. v. Adobe Inc.*, 978 F.3d 1278, 1294-95 (Fed. Cir. 2020).

At *Alice* step two, Appellees’ arguments founder on the point—one they do not dispute, but rather *highlight*—that the district court found “no evidence” that the claimed combination of elements reflected “routine” use of the Web. A.Br. 61. In the absence of such evidence, Appellees could not possibly have carried their clear-and-convincing burden on this fact question at summary judgment. E.Br. 55-59.

Because these claims are patent-eligible, reversal and remand is appropriate.

## ARGUMENT IN REPLY

### A. The Asserted Claims Are Patent-Eligible Under *Alice* Step One.

#### 1. The '507 patent claims are directed to specific and non-abstract improvements in computer network technology.

Eolas' opening brief demonstrated how the asserted claims of the '507 patent recite a re-architected World Wide Web that “functions differently,” *Enfish LLC v. Microsoft Corp.*, 822 F.3d 1327, 1337 (Fed. Cir. 2016), and can “do things it could not do before,” *Finjan, Inc. v. Blue Coat Sys.*, 879 F.3d 1299, 1305 (Fed. Cir. 2018). E.Br. 29-35. Relocating and reconfiguring the Web's critical components in the specific manner recited yields a result “that overrides the routine and conventional sequence of events ordinarily triggered by the clink of a hyperlink.” *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1248-49 (Fed. Cir. 2014); E.Br. 36-41. And that result includes functionality benefits in the areas of increased interactivity, scalability, and security. E.Br. 17-20. The asserted claims thus “are not directed to using a computer as a tool—that is, automating a conventional idea on a computer.” *SRI Int'l, Inc. v. Cisco Sys.*, 930 F.3d 1295, 1304 (Fed. Cir. 2019). They are instead directed to a patent-eligible “improvement to computer functionality itself.” *Id.* They are directed, that is, to patent-eligible improvements in the functionality of the World Wide Web. Nothing in Appellees' response suggests otherwise.

Eolas demonstrated, and Appellees nowhere refute, that the asserted claims relocate objects in the Web's architecture; relocate and split up applications in that

architecture; and require a substantially reconfigured Web browser—among other specific changes to the Web’s configuration. E.Br. 31-35.

In the then-existing Web, interactive objects were downloaded to the client computer and then displayed with an external helper application launched by the user. Appx69 (6:27-33). In the improved Web of the ’507 patent, interactive objects are embedded within Web pages, so that a user can “interact, within one or more Web pages, with at least part of one or more objects while at least part of each of said one or more objects is displayed to the user within at least one of said one or more World Wide Web pages.” Appx78 (claim 32, 23:40-44). The improved Web of the ’507 patent also requires relocated applications: now the Web browser itself “has been configured with a plurality of different interactive-content applications.” Appx78 (claim 32, 23:37-38). The Web browser has also been configured to detect, using information transferred by the server computer, “at least part of an object to be displayed in a World Wide Web page,” and further to select, based on that information, an application “from among the different interactive-content applications” with which the Web browser has been configured. Appx78 (claim 32, 23:45-53). And when a particular application is selected by the browser, it is “automatically invoke[d]” so the user can “interact within the World Wide Web page with at least part of the object while at least part of the object is displayed to the user within the World Wide Web page.” Appx78 (claim 32, 23:51-59).

The interactive-content applications are not only specifically located and automatically invoked in the improved Web of the '507 patent; they are also broken up and distributed among multiple computers connected to the Web. That is, while the Web browser on the client computer is “configured with a plurality of interactive-content applications,” each of those applications is in turn “configured to operate as part of a distributed application configured to enable a user to perform the interaction through the use of communications sent to and received from at least a portion of the distributed application located on two or more distributed application computers connected to the World Wide Web distributed hypermedia network on the Internet, the two or more distributed application computers being remote from the client computer.” Appx78 (claim 32, 23:36-37, 23:61-24:2).

Eolas further demonstrated, and Appellees nowhere refute, that these structural changes to the Web’s architecture were revolutionary, and were contrary to the reigning conventional wisdom at the time. E.Br. 3-4, 15-16, 55-56; Appx19967-19968 (“[i]nlined images ... are bad enough”); Appx19971 (“I still don’t like the idea of firing off arbitrary executables on the client side.”). But after the inventors demonstrated that these changes could be implemented successfully, the Web adopted a mechanism to embed interactive objects in Web pages. E.Br. 16-17; Appx12024, Appx11972. The only conceivable reason for that adoption: Eolas’ reconfigured approach leads to improved functionality in the World Wide Web.

Indeed, implementing these structural changes results in markedly improved computer network functionality in the areas of interactivity, scalability, and security. E.Br. 29-35. These improvements are not abstract, and they do not involve using the Web as a tool—they unmistakably improve the functionality of the Web itself. Under *Alice* and the substantial line of authorities recounted in Eolas’ brief, E.Br. 35-42, these claims are directed to patent-eligible subject matter, and pass step one. *See Uniloc USA, Inc. v. LG Elecs. USA, Inc.*, 957 F.3d 1303, 1309 (Fed. Cir. 2020) (noting that claims are “routinely” held patent-eligible “when they are directed to improvements to the functionality of a computer or network platform itself”).

## **2. Appellees’ response provides no reason to find otherwise.**

### **a. Appellees leave dispositive points unrebutted.**

In response, Appellees rely upon the “directed to” formulation advanced by the district court: they posit that the “’507 patent is directed to enabling interactivity with remote objects on a client computer browser using distributed computing.” A.Br. 5. Critically, however, Eolas demonstrated that this formulation suffers from a number of fatal flaws, including: (1) it ignores the ubiquitous “World Wide Web” limitations in the asserted claims; (2) it fails to account for the many “configured” limitations at the heart of the claims; and (3) it does not appear to describe an abstract idea at all—certainly no 1994-era Web user would have found that new Web functionality an abstraction. E.Br. 44-47. And while Appellees repeat their “directed

to” formulation a dozen times, *see* A.Br. 2, 5, 7, 14, 16, 21, 22, 23, 36, 49, 51, 53, they never substantially rebut Eolas’ showing on this dispositive step-one issue.

(1) Appellees do not dispute that the “World Wide Web” limitations played an important role in the prosecution of the asserted claims of the ’507 patent and in the parties’ other substantive fights in this protracted litigation. E.Br. 44; A.Br. 49-50. Nor do Appellees dispute that it would be error to ignore those limitations—recited *fourteen* times in the claim analyzed by the district court. Appx78 (claim 32). Instead, Appellees assert: “That the district court’s articulation of the abstract idea does not specifically mention the ‘web’ does not mean that the court ignored those limitations.” A.Br. 50. Appellees thus argue that the district court did not *ignore* the “World Wide Web” limitations—it intentionally *dismissed* them, either as nothing more than “technical jargon” or as “merely requir[ing] a particular technological environment.” A.Br. 49-50. Those arguments do not withstand scrutiny.

The claims and their specification and prosecution history leave no doubt that the “World Wide Web” limitations are tightly linked to the claimed advance over the prior art, and that advance concerns a reconfiguration of the World Wide Web environment itself. E.Br. 7-9, 15-23, 44; Appx11966-11967, Appx12828-12952, Appx12836-12846, Appx13633-13649. It was plain error to omit those limitations—whether by ignoring them or intentionally dismissing them—from the “directed to”

formulation at *Alice* step one. E.Br. 43-44; *TecSec*, 978 F.3d at 1294. Appellees do nothing to justify that error; they simply perpetuate it.

(2) Appellees similarly do not dispute that it would be error to ignore the asserted claims’ central “configured” limitations. A.Br. 50. Instead, Appellees argue that “each ‘configured’ limitation corresponds precisely to the court’s recitation of the abstract idea.” A.Br. 50. Again, that argument does not withstand scrutiny.

The district court’s recitation of the abstract idea—adopted by Appellees here—says nothing about, among other things, embedding objects in Web pages, preconfiguring Web browsers with interactive-content applications, splitting those applications up to run on two or more remote computers, or automatically invoking a selected application for inline interaction with an embedded object. E.Br. 44-45. The district court’s formulation of the abstract idea, that is, “corresponds precisely” to *none* of the specific “configured” limitations in the asserted claims. *See* A.Br. 50. Indeed, Appellees elsewhere concede, as Eolas demonstrated in its brief, that there are myriad ways the district court’s “abstract idea” could be implemented *without* practicing the asserted claims. E.Br. 51; A.Br. 25 (simply arguing, in response to this showing, that “the absence of complete preemption does not demonstrate patent eligibility”). That could *only* be the case if the court’s “recitation of the abstract idea” *does not* “correspond[] precisely” to “each ‘configured’ limitation.” *See* A.Br. 50.



Again, each of the “configured” limitations is tightly linked with the claimed advance over the prior art—which concerns a newly “configured” World Wide Web architecture. E.Br. 7-9, 15-23, 44; Appx12836-12846. It was a further error to omit those limitations from the “directed to” formulation at *Alice* step one—another error perpetuated by Appellees. E.Br. 43-44; *TecSec*, 978 F.3d at 1294.<sup>1</sup>

(3) Tellingly, Appellees also do not dispute that, if “Web users in 1994” were asked “would enabling interactivity with remote objects on your browser using distributed computing constitute a new and useful improvement of your computer network,” they “would answer yes.” A.Br. 51. The logical and necessary conclusion is that the district court’s “directed to” formulation does not describe an abstract idea at all, but rather an invention directed to a new and useful improvement of a pre-existing computer network—patent-eligible under *Alice*. E.Br. 46-47.

Appellees nevertheless suggest that this “hypothetical does not bear on eligibility” because, they posit, the users’ “immediate next question would be: ‘How do you do that?’” A.Br. 51. This reflects a misunderstanding of the *Alice* step-one analysis. The “how” question is relevant to the § 101 abstract-idea inquiry—as

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<sup>1</sup> Appellees attempt to distinguish *TecSec* on the ground that, “[h]ere, the purportedly disregarded elements are not treated as an important part of the claimed advance.” A.Br. 51. That is plainly incorrect. It is inconceivable that neither the “World Wide Web” nor the “configured” limitations are an important part of the claimed advance. E.Br. 44-45. It is also plainly inconsistent with Appellees’ argument, in the preceding paragraph, that their recitation of the “abstract idea” is proper because it purportedly “corresponds precisely” to the disregarded elements. A.Br. 50.

Appellees’ cited cases confirm—when a claim is “directed to a result or effect that itself is the abstract idea and merely invokes generic processes and machinery.” *Two-Way Media Ltd v. Comcast Cable Communs., LLC*, 874 F.3d 1329, 1337 (Fed. Cir. 2017). When a claim is directed to a useful improvement of a pre-existing computer network, it is patent-eligible, and the “how” question is relevant only to an inquiry under § 112. *See* 35 U.S.C. § 112(f); *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 223, 225 (2014). Indeed, it could hardly be otherwise: if the “how” question were dispositive of eligibility regardless of whether the claim was otherwise directed to an abstract idea, then Congress could not have expressly approved functional claiming in § 112. But Congress did approve functional claiming § 112; therefore the “how” question is relevant to the § 101 abstract-idea inquiry only when the claim is otherwise directed to a result “that itself is the abstract idea.” *Two-Way Media*, 874 F.3d at 1337.<sup>2</sup> Appellees’ effective concession that even the district court’s formulation describes a useful improvement of a pre-existing computer network confirms that these claims are not directed to any abstract idea.

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<sup>2</sup> Appellees cite *American Axle* in support of their argument that the “how” question might alone be dispositive of eligibility in this case. A.Br. 52 (citing *Am. Axle & Mfg. v. Neapco Holdings LLC*, 967 F.3d 1285, 1302 (Fed. Cir. 2019)). But *American Axle* provides no such support. It cannot be read to conflict with § 112(f), and in any event, its “holding as to step 1 of *Alice* extends only where,” as was the case there, “a claim on its face clearly invokes a natural law, and nothing more, to achieve a claimed result.” *Am. Axle*, 967 F.3d at 1298. That is not the case here.

Putting Appellees’ misunderstanding of the step-one inquiry aside, they are wrong on the merits: the asserted claims do specifically recite *how* to enable interactivity with remote objects on a client browser using distributed computing. Among other specifically recited requirements: objects must be embedded into Web pages; Web browsers must be preconfigured with interactive-content applications; those applications must in turn be split up to run on two or more remote computers; and the Web browsers must be configured to automatically invoke a selected interactive-content application, using information provided by a server, to permit inline interaction with an embedded interactive object. E.Br. 15-23, 29-35. Under this Court’s authority, eligibility requires nothing more. E.Br. 48-49; *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1261-62 (Fed. Cir. 2017). Indeed, the asserted claims do not recite functional results at all: they recite new systems and methods “for disseminating interactive content via the World Wide Web distributed hypermedia network” through specific reconfigurations of the objects, pages, browsers, applications, and servers of that pre-existing computer network. Appx78 (claim 32); E.Br. 15-23, 29-35; *see Uniloc*, 957 F.3d at 1309.

Appellees complain that, “[i]f Eolas’s reasoning were the law, then *any* patent claim purporting to improve computer technology would be eligible.” A.Br. 52. But Eolas’ reasoning simply demonstrates that the district court’s already flawed “directed to” formulation does not even describe an abstract idea under *Alice*’s

controlling test. E.Br. 46-47. It is Appellees who seek a radical and unwarranted extension of the abstract-idea exception to § 101—one that would improperly threaten to “swallow all of patent law.” *See Alice*, 573 U.S. at 217.<sup>3</sup>

**b. The claims recite a newly configured World Wide Web architecture—structure, not function.**

Appellees’ responsive arguments thus fail to fix the fatal flaws in the district court’s “directed to” formulation at *Alice* step one. Appellees’ attempts to affirmatively support that formulation fare no better. Adopting the formulation, Appellees aver that the asserted claims “focus on the abstract concept of enabling interactivity with remote objects on a client computer browser using distributing computing—and recite no specific, much less limiting, way to achieve that aspirational result.” A.Br. 7. In support of that assertion, Appellees argue that the claims recite nothing more than “result-oriented” and “functional” language. A.Br. 21. Possibly hoping for some hypnotic effect, Appellees repeat this “functional” allegation like a mantra throughout their response. A.Br. 2, 14, 16, 18-22, 25-31, 33,

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<sup>3</sup> Indeed, Appellees’ radical view of § 101 is reflected in their argument that the asserted claims are patent-ineligible because “Dr. Doyle and his co-inventors had an idea ... [to] embed interactive content directly into the previously static web pages.” A.Br. 23; Appx4927. Appellees suggest, in other words, that § 101 renders ineligible any patent claim that springs from an initial idea. If that is true, then the U.S. patent system is truly broken. But of course it is not true, and *Alice* itself recognizes that all patent-eligible claims spring from ideas. 573 U.S. at 217. As long as the claims are drawn to a new and useful improvement of a pre-existing technology—like those here—they satisfy § 101’s eligibility requirements. *Id.* at 221-22.

37, 41, 47, 52-55, 57-59. But the spell is broken by reviewing the actual claim language—which recites a specific (and limiting) way to structurally reconfigure the major components of the World Wide Web. E.Br. 15-26, 29-35.

As shown above, the step-one formulation adopted by Appellees is materially inaccurate, *supra* 6-8; it describes a useful improvement of a pre-existing computer network system (not an abstract idea), *supra* 9-11; and functional language, standing alone, does not render a claim ineligible for patenting under the statute, *supra* 10. But putting all that aside, Appellees’ ubiquitous “functional” allegation simply turns a blind eye to the fundamental nature of the asserted claims. These claims do not recite any “aspirational result” whatsoever. *See* A.Br.7. Instead, they recite a specific reconfiguration of the Web: interactive objects are embedded into Web pages; Web browsers are preconfigured with interactive-content applications; those applications are in turn broken up and run on two or more remote computers; and when a particular application is selected by the Web browser, using information provided by a server, it is automatically invoked to permit inline interaction with an embedded object. E.Br. 29-35; Appx78. These are structural limitations that provide a new Web architecture, and override the “conventional sequence of events ordinarily triggered by the click of a hyperlink.” *DDR Holdings*, 773 F.3d at 1248-49.

Given that Appellees defend a step-one formulation that dismisses both the pervasive “World Wide Web” and central “configured” limitations in the asserted

claims, it is not surprising that Appellees miss the dispositive fact that the claims are drawn to a newly “configured” “World Wide Web” architecture. Aware that their arguments will founder on the critical limitations in the claims, Appellees erect straw-man arguments—which ignore those limitations—that they can bravely battle.

Appellees repeatedly assert, for example, that at claim construction, Eolas sought “broad, generic constructions” for the terms “interactive-content application,” “distributed application,” and “coordination.” *See* A.Br. 11, 12, 14, 16, 17, 21, 22, 26, 53, 59. But nothing untoward happened at claim construction. Eolas simply argued, following this Court’s law, for the application of plain and ordinary meaning.<sup>4</sup> Appx6515-6551. More to the point, nothing about those plain and ordinary meanings has any impact on the structural nature of the newly “configured” “World Wide Web” architecture recited in the asserted claims. E.Br. 29-35. And nothing in Appellees’ response suggests otherwise. This is a straw man.

Appellees further argue that the claims “lack[] any details on how the key elements—the ‘interactive content application’ and the ‘distributed application’—

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<sup>4</sup> Appellees repeatedly cite a snippet from Eolas’ claim construction brief to the effect that “the claims themselves are silent as to *how* or *why* a Web browser is configured the way it is.” A.Br. 37, 51; Appx4943. But taking the snippet out of context misleads. It is drawn from a longer sentence, which makes clear that Eolas was simply making the point that the claims do not require any particular state of mind on the part of Web browser users: “the claims themselves are silent as to *how* or *why* a Web browser is configured the way it is, yet [Appellees] seek to instill some sort of purposeful *mens rea* on the part of Web browser users.” Appx4943.

provide the desired interactivity.” A.Br. 14. This is another straw man. The desired interactivity is provided by the way in which the major components of the Web—including its applications—are reconfigured in the specific manner recited in the claims: embedding the object, preconfiguring the browser, splitting up and automatically invoking the application, and so on. E.Br. 14-23, 29-35. The improvements in computer network functionality flow from the new way in which the components are combined—classic patent-eligible subject matter. E.Br. 27-29.

Appellees also suggest that that the “configured” limitations relate to “basic computer functions, such as ‘receiving,’ ‘transferring,’ ‘display[ing],’ and ‘communicati[ng]’ information.” A.Br. 22. Yet another straw man. The advance in the “configured” limitations is not simply in receiving, transferring, displaying, or communicating information; it is in how the structural components of the World Wide Web are reconfigured to change the way interactive content is received, transferred, displayed, and communicated on the Web. That technological improvement to a pre-existing computer network system is patent-eligible. E.Br. 38.

Appellees also cite to a number of this Court’s cases as purported support for their “functional” argument. A.Br. 26-29. But those cases are distinguishable.

Appellees cite *Two-Way Media* for the proposition that a claim is patent-ineligible when it is “directed to a result or effect that itself is the abstract idea and merely invokes generic processes and machinery.” A.Br. 28; *Two-Way Media*, 874

F.3d at 1337. The claims asserted here are not directed to a result, much less a result that itself is an abstract idea: they are directed to improving a pre-existing computer network system through reconfiguring the major components of the World Wide Web. *Supra* 4-5. And that improvement is *not* secured by invoking the generic processes of the pre-existing computer network system: the claims require, among other things, that objects and applications in the Web are relocated, and that applications, pages, browsers, and servers in the Web are reconfigured. Under these claims, the Web itself functions differently. E.Br. 29-35; *supra* 3-6.

Appellees also cite the unpublished *Aftechmobile* decision, in which the Court found ineligible claims directed to “mobile application development software” that recited only “desired functions without corresponding recitations on how to achieve or implement those functions.” A.Br. 26-27; *Aftechmobile Inc. v. Salesforce, Inc.*, 853 F. App’x 669 (Fed. Cir. 2021). In contrast to those claims, the claims asserted here are directed to improving a pre-existing computer network. And again, as shown above, *supra* 3-6, the claims asserted here recite *how* to implement those improvements to the Web by specifically reconfiguring its major components.

*Interval Licensing*, *Affinity Labs*, and *Free Stream Media* are all similarly distinguished. A.Br. 26-29; *Interval Licensing LLC v. Symantec Corp.*, 896 F.3d 1335 (Fed. Cir. 2018); *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253 (Fed. Cir. 2016); *Free Stream Media Corp. v. Alphonso Inc.*, 996 F.3d 1355 (Fed.



Cir. 2021). The claims in *Interval Licensing* were directed to the abstract idea of “providing information to a person without interfering with the person’s primary activity,” and “simply demand[ed] the production of [that] desired result ... without any limitation on how to produce that result.” 896 F.3d at 1344-45. The claims in *Affinity Labs* were directed to the abstract idea of “providing out-of-region access to regional broadcast content”—and were “entirely functional in nature,” “untethered to any specific or concrete way of implementing” the idea. 838 F.3d at 1255-58. And the claims in *Free Stream Media* were directed to improvements regarding “the abstract idea of targeted advertising,” with no limitation on how any “functional result is achieved.” 996 F.3d at 1363, 1365. Again, the claims asserted here are not directed to an abstract idea, nor do they demand the production of an improved Web without any limitation on how to produce it. *Supra* 4-5, 12-13.

Appellees also cite to *Simio*, where the Court found ineligible claims directed to the “abstract idea of using graphics instead of programming to create object-oriented simulations.” A.Br. 29; *Simio, LLC v. Flexsim Software Prods.*, 983 F.3d 1353, 1360 (Fed. Cir. 2020). The Court found no showing that the claims in that case were “directed to improving a computer’s functionality” because “improving a user’s experience while using a computer application is not, without more, sufficient to render the claims directed to an improvement in computer functionality.” *Id.* at 1361. That is not what is happening here. The asserted claims are not directed simply

to “improving a user’s experience while using a computer application”—they are directed to a new way of “disseminating interactive content via the World Wide Web” by reconfiguring the major components of that distributed hypermedia network. E.Br. 29-35. Improving a computer network through a new configuration of old components is classic patent-eligible subject matter. E.Br. 27-29.

**c. The claims recite improvements to the World Wide Web.**

In addition to their primary “functional” argument, Appellees also dispute—as Eolas demonstrated, E.Br. 15-23, 29-35—that the claims recite improvements to Web interactivity, scalability, and security. Appellees’ disputes are without merit.

**(1) Interactivity.** Appellees argue that the claims do not improve interactivity because the solution to limited interactivity is using distributed computing, and that is the abstract idea. A.Br. 36-37. This series of non sequiturs misses at each step. The claims unquestionably improve interactivity on the Web, and that improvement results from the recited relocation and reconfiguration of the Web’s major components: embedding objects in Web pages; preconfiguring Web browsers with interactive-content applications; splitting those applications up to run on two or more remote computers; automatically invoking a selected application for inline interaction with an embedded object. This is not abstract; it is a combination of structural changes that, together, overcame obstacles of limited computing power and limited bandwidth to allow increased interactivity on the Web. E.Br. 30-32.

Appellees also repeat their “how” argument, asserting that the claims do not recite “*how*” the improved interactivity is achieved, and that “*all* ways” of achieving that improved interactivity “are encompassed by the generic and functional claim language.” A.Br. 37. This ground has already been covered: the advance over the prior art is specifically recited, and it requires new and particular placements of objects and applications, as well as new and particular reconfigurations of objects, pages, applications, browsers, and servers in the Web. *Supra* 4-5. Further, as noted, Appellees elsewhere concede that there are myriad ways of achieving the improved interactivity identified by the district court without practicing the specific methods and systems recited in the claims. *Supra* 8. It could be done, for example, without preconfiguring the browser with interactive-content applications. It could be done without embedding remote objects in other network documents. It could be done without automatically invoking applications to permit inline interaction with objects. It could be done by distributing the computing power of the client, rather than by distributing the interactive-content application. Eolas pointed all this out in its brief, and Appellees dispute none of it in response. E.Br. 51; A.Br. 25, 37.<sup>5</sup>

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<sup>5</sup> In making their misguided “how” argument, Appellees also break the claims down to consider each element individually. A.Br. 37-38 (arguing, for example, that the claims do not recite a technologically improved way of selecting the interactive-content application). That approach is improper at step one, as it necessarily misses the claims’ character as a whole and their advance over the prior art. E.Br. 27-28.

**(2) Scalability.** Appellees also argue that the asserted claims do not improve Web scalability—but then they insist that “improved ‘scalability’ is the natural result of using distributed processing.” A.Br. 39. Thus, by their own argument, Appellees do not dispute that the claims will naturally result in improved Web scalability.

Appellees further argue that “[s]calability” is not the focus” of the asserted claims, and that the claims “recite no specific method for *how* to perform coordination” or “*how* to break up a task” in the recited combination. A.Br. 39-40. But all that is beside the point, and such piecemeal analysis of individual elements is improper at *Alice* step one. E.Br. 27-28; *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1312 (Fed. Cir. 2016); *Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1149-50 (Fed. Cir. 2019). The focus of the asserted claims, and their advance over the prior art, was not on *how* to perform coordination, or on *how* break up a task; it was on *how* to reconfigure the Web’s major components to allow a new and improved way of disseminating interactive content via that pre-existing distributed hypermedia network. Appx78 (claim 32); E.Br. 29-35. As Eolas demonstrated in its opening brief, the specific configuration recited in the asserted claims results in substantial improvements to Web scalability. E.Br. 32-33.

Appellees end their “scalability” argument by suggesting that the Court should not consider embodiments in the specification at *Alice* step one because, at claim construction, the district court did not find the claims limited by those

embodiments. A.Br. 40-42. Appellees suggest, that is, that considering the specification's embodiments is "foreclosed by this Court's precedent" when the claims have been construed according to their plain meaning. *See* A.Br. 42. But that has never been law. The specification must always be considered at step one, and claims are presumptively construed according to their plain meaning, which reflects the specification's use of various terms. E.Br. 27-29.<sup>6</sup>

**(3) Security.** By ensuring that only interactive-content applications with which a Web browser has been configured can be utilized in the new network system, the asserted claims provide "clear security advantages" over the prior art. Appx12029; E.Br. 16-20, 33-34. The summary judgment evidence on this point—which must be credited—is unequivocal. Appx12025-12030 (security-related testimony from Dr. Martin); Appx12968-12978 (security-related testimony from Dr. Doyle); Appx12836-12845. In asserting that the claims do not recite any improvement in Web security, Appellees turn their principal argument upside down:

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<sup>6</sup> The district court also erred in disregarding the patent's teachings on the "viewing transformations" element of claim 45 on the ground that "[a]t Eolas' request, the term 'viewing transformations' was construed to exclude embodiments in the specification." Appx29; E.Br. 54. Appellees suggest that, "in context, it is clear the court simply meant the term was construed to not be limited to embodiments regarding 3D views." A.Br. 31 & n.4 (citing Appx6543-6545). But that is not clear at all. If the term covers the embodiments, then there are no grounds to find those embodiments irrelevant. Furthermore, the district court did not adopt Eolas' proposal on this term. Appx6543-6545. So its assertion that Eolas asked for an exclusionary claim construction, which was adopted, reflects confusion on multiple levels.

“this clause simply configures the web browser with a plurality of applications to enable interaction in a webpage; it says nothing of preventing those applications from being dangerous.” A.Br. 42. With respect to improved security, in other words, Appellees argue that the claims recite only *how* to configure the system to achieve the benefits recognized by the experts, without reciting a corresponding *functional result*. But turning the argument upside down does not make it any stronger: “Claims need not articulate the advances of the claimed combinations to be eligible.” *Uniloc*, 957 F.3d at 1309; *see also TecSec*, 978 F.3d at 1293-94.

Appellees’ arguments reflect an (at least) implicit recognition that the claims *do* improve Web security. Appellees argue, for example, that one could “do a poor implementation of [the patent] that could launch unsafe applications,” and that a programming language identified in Eolas’ infringement contentions “has known security drawbacks.” A.Br. 43. But § 101 does not require a comprehensively perfect improvement in security, nor an absolutely foolproof improvement in security; “any new and useful improvement” makes the cut. 35 U.S.C. § 101; E.Br. 40-42; *TecSec*, 978 F.3d at 1293-94 (finding patent-eligible claims that improved “a basic function of a computer data-distribution network, namely, network security”); *Uniloc*, 957 F.3d at 1309 (finding patent-eligible claims reciting a “reduction of latency” as “a specific improvement in the functionality of the communication system itself”).

Appellees also offer an extensive argument to the effect that the Court should ignore or discount the prosecution-history discussion of security identified in Eolas' opening brief. A.Br. 43-46; E.Br.9, 31.<sup>7</sup> That discussion leaves no doubt—contrary to Appellees' argument—that both the inventors and the PTO examiner understood that the '507 patent was intended, at least in part, to overcome serious and acknowledged security vulnerabilities in the prior art. Appx12842. But whatever the status of that discussion, the fact remains that the intrinsic record cannot supplant the priority of *the actual claim language* in the *Alice* step one analysis. *TecSec*, 867 F.3d at 1258. And the claims provide a security improvement over prior art browsers through a specific technique that departed from earlier approaches. E.Br. 53. On this point, Appellees cite to the district court's statement that “relying on a solution to a problem that was not disclosed in the patent would essentially reward Eolas' failure to disclose that purported solution in the patent, which would be inconsistent with the underlying goal of the patent system.” A.Br. 46; Appx23. This statement misses on two levels. One, the solution *is* recited in the patent; it is found in the claims. *Supra* 4-5. Two, the statute has specific requirements for what must be disclosed in a patent—and those requirements are found in § 112, not § 101.

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<sup>7</sup> Appellees are wrong to suggest waiver here. A.Br. 43-44. The security issue was both pressed and passed on below. It is fully preserved for appeal. *See Interactive Gift Express, Inc. v. CompuServe Inc.*, 256 F.3d 1323, 1344 (Fed. Cir. 2001).

**d. The claims recite *far* more than “many hands make light work.”**

Appellees rely heavily on their argument that the “claims’ use of distributed computing is akin to an age-old concept: many hands make light work.” A.Br. 32-35 & n.5. That line of argument can be dismissed quickly, because the claims cannot reasonably be read as subsumed by the concept that many hands make light work. To be sure, the claims make use of distributed computing. But they apply distributed computing in a specific way, and in the context of a significantly reconfigured Web environment: one in which objects are embedded into Web pages; Web browsers are preconfigured with interactive-content applications; those applications are in turn broken up and distributed; and the distributed applications are automatically invoked to permit inline interaction with embedded objects. *Supra* 4-5. The claims do not simply recite the use of distributed computing in the generic, pre-existing Web environment (*see* A.Br. 32); they recite the application of distributed computing to a particular component in a substantially new Web environment in which the Web’s major components have been reconfigured and recombined in important ways.

**B. The Asserted Claims Would Be Patent-Eligible Under *Alice* Step Two.**

**1. The technological improvements recited in the ’507 patent claims were not well-understood, routine, or conventional.**

Eolas’ opening brief demonstrated that—while the Court should not reach *Alice* step two—there is *no* evidence, whatsoever, that Web servers, Web browsers, Web pages, interactive-content applications, and remote objects were



conventionally and routinely configured in the combined manner required by the asserted claims. E.Br. 54-56. There is substantial evidence, on the other hand, that these claims recite far more than the performance of well-understood, routine, and conventional activities previously known to the industry. E.Br. 15-23, 29-35, 56-57; Appx12006-12169, Appx12216-12233, Appx12835-12853, Appx13097-13099, Appx13100-13109, Appx12967-13029, Appx13643-13644, Appx19689-19690. Eolas demonstrated, and Appellees nowhere refute, that—as in *DDR*—the claimed methods and systems “override[] the routine and conventional sequence of events ordinarily triggered by the click of a hyperlink.” 773 F.3d at 1258-59.

Appellees’ response likewise offers *no* evidence, whatsoever, that—at the time of the invention—the claimed combination of elements reflected the routine and conventional use of the then-existing World Wide Web. A.Br. 53-62. The record thus demonstrates, at the very least, a “genuine issue of material fact regarding whether the claimed element or claimed combination is well-understood, routine, [and] conventional.” *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1367 (Fed. Cir. 2018). Summary judgment therefore could not have been appropriate. E.Br. 55.

## **2. Appellees’ response provides no reason to find otherwise.**

(a) Appellees open their step-two argument with the bald assertion that “the claims here recite only conventional computer-implemented steps and network architecture ....” A.Br. 59. But they offer no factual support for that assertion,

because there is no factual support for that assertion. These claims recite a new Web architecture, and no evidence suggests otherwise. A.Br. 59; E.Br. 55. To be sure, that architecture reflects a new combination of some pre-existing elements. But that is true for virtually every patent-eligible invention. E.Br. 54-55.

(b) Understanding that they have no factual support for the fact-based step-two inquiry, Appellees urge the Court to disregard the unconventional nature of the newly configured Web architecture because the claimed combinations purportedly add nothing “apart from” the abstract idea formulated by the district court. A.Br. 60. That is incorrect. Putting aside that the court’s formulation does not describe an abstract idea, the asserted claims plainly go far beyond that formulation—adding, for example, the pervasive “World Wide Web” and the central “configured” limitations. *Supra* 6-8. The district court’s formulation takes no account of embedding objects in Web pages; preconfiguring Web browsers with interactive-content applications; splitting those applications up to run on two or more remote computers; or, using information provided by a server, automatically invoking the applications to permit inline interaction with embedded objects. And again, there is no dispute that the district court’s formulation could be implemented with an untold number of configurations that do not practice the claims. *Supra* 8. In other words, even under the district court’s formulation of the purported abstract idea, there is

more—far more—in the claims that would reflect a new, useful, and patent-eligible application of that purported abstract idea. *See Alice*, 573 U.S. at 217, 221-22.

(c) In response to Eolas’ demonstration that the district court improperly collapsed its step-two analysis into its step-one analysis, E.Br. 57, Appellees argue that the district court’s step-two analysis was proper because the court “determined that the limitations that Eolas relied upon ‘embody the abstract idea’ itself,” A.Br. 60; Appx32. But that argument merely confirms that the court misapplied *Alice* step two. *Alice* step two asks nothing more nor less than whether the claim limitations “embody”—that is, “give a concrete form to,” *see Embody*, Dictionary.com, <https://www.dictionary.com/browse/embody>—the identified abstract idea. *Alice*, 573 U.S. at 221-22; *see also id.* at 217 (confirming that patent-eligible inventions “embody ... abstract ideas”). In any event, there can be no substantial dispute that the district court never engaged in the proper step-two analysis: it never determined, nor could it, that the claimed combination reflected well-understood, routine, and conventional Web architecture or activity. E.Br. 54-59.

(d) In response to Eolas’ demonstration that the district court earlier found (and never called into question) that there was no evidence that the asserted claims recited a “routine” application of Web technology, E.Br. 58, Appellees argue that “the district court made no findings as to what was or was not ‘routine,’” but “simply found that [Appellees] submitted ‘no evidence’” that the claims reflected any

“routine” use of the Web, A.Br. 61; Appx13643. But that provides Appellees no help at all. Under *Alice* step two, “whether a ... combination of elements is well-understood, routine and conventional” is “a question of fact” that “must be proven by clear and convincing evidence.” *Berkheimer*, 881 F.3d at 1367. Appellees’ concession that no evidence supports them on this question of fact—on which they bore a clear-and-convincing burden of proof—confirms that it could not possibly have been proper to grant summary judgment in their favor. *See id.*

### CONCLUSION

For these reasons, the judgments should be reversed or vacated and remanded for further proceedings.

Respectfully submitted,

/s/ John B. Campbell

Joel L. Thollander

John B. Campbell

Joshua W. Budwin

James E. Quigley

MCKOOL SMITH, P.C.

303 Colorado Street, Suite 2100

Austin, TX 78701

(512) 692-8700

*Attorneys for Plaintiff-Appellant*

## **CERTIFICATE OF COMPLIANCE**

I certify that the foregoing Appellant's Reply Brief:

1. Complies with the type-volume limitation of Fed. Cir. R. 32(b)(1). This brief contains 6,831 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(f) and Fed. Cir. R. 32(b)(2). Microsoft Word was used to calculate the word count.

2. Complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type style requirements of Fed. R. App. P. 32(a)(6). This brief has been prepared in a proportionally-spaced typeface using Microsoft Word in 14-point Times New Roman type style.

Dated: January 26, 2023

/s/ Joel L. Thollander

Joel L. Thollander